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| **logo University of Management & Technology** School of Science & Technology **Department of Chemistry** |
| CH-102L PRINCIPLES OF CHEMISTRY-II LAB |
| **Lecture Schedule** |  | **Semester** |  |
| **Pre-requisite** | Principles of Chemistry-I Lab | **Credit Hours** | 1 |
| **Instructor(s)** |  | **Contact** | adnan.amjad@umt.edu.pk |
| **Office** |  | **Office Hours** |  |
| **Lab Policy**  | Students are expected to perform experiments (as per attached list)related to the course work, analyze the data, draw conclusions, and write a report. Grades will be awarded based on student’s lab reports and a final exam in the lab.  |
| **Grading** **Policy for Lab work**  | Laboratory Reports 40 Marks Final Examination 60 Marks |
| **Attendance** **Policy** **for Lab** | Students missing more than 20% of the labs will receive an “F” grade in the Lab work.  |

**List of Experiments**

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| **Week** | **Exp. No.** | **Title of Experiment** |
| 1st |  Introduction of the lab course and lab safety guidelines. |
|  **Basic Laboratory Apparatus and Techniques** |
| 2nd | 1 | Introduction of laboratory apparatus and understanding of basic techniques to perform chemistry lab experiments. |
|  **Standardization and Calculations for Normality of H2SO4 Solution**  |
| 3rd | 2 | Preparation & standardization of 0.5N solution of H2SO4 solution. |
|  **Potentiometric Acid Base Titration by using pH Meter**  |
| 4th | 3 | Determine the pH of the given solution of a strong acid & weak acid by pH measurement method. You are provided with 0.1 N NaOH Solution. |
|  **Preparation of Buffer Solutions & Determine their Buffer Capacity** |
| 5th | 4 | Prepare buffer solutions of various pH values from ammonia solution and ammonium chloride and check their buffer capacity.  |
|  **Redox Titration (Oxidation and Reduction Titration)** |
| 6th | 5 | Determine the percentage purity of the given FeSO4.7H2O sample solution volumetrically by using 0.0166 Msolution of K2 Cr2 O7.   |
|  **Estimation of Copper ions** |
| 7th | 6 | Determine the amount of Copper ions (Cu+2) in 250 mL of the copper sulphate solution. You are given 0.1 M Na2S2O3 solutions. |
|  **Standardization of EDTA solution by using different Indicators** |
| 8th | 7 | Standardize the given EDTA solution using different indicators. You are provided with 0.05 M ZnSO4 solution and 0.05 M MgSO4 solution. |
|  **Gravimetric Estimation of Nickel Metal** |
| 9th | 8 | Determine the amount of Nickel ions (Ni2+) in the given sample solution gravimetrically and calculate the percentage purity of its salt.  |
|  **Percentage Purity of NaCl by Mohr’s Method** |
| 10th | 9 | Find out the %age purity of a commercial sample of NaCl by Mohr’s method. You are provided with 0.05 M AgNO3 solution. |
|  **Preparation of Sodium Thiosulphate Crystals** |
| 11th | 10 | Prepare Penthydrate Crystals of Sodium Thiosulphate (Na2S2O3.5H2O) You are given Sodium Sulphite (Na2SO3) and powdered Sulphur (S). |
|  **Revision Lab Week** |
| 12th | 11 | Revision of important concepts and experimental techniques |
|  **Makeup Classes Week**  |
| 13th |  |  Any makeup of Lab  |
| 14th  |  **Lab. Final Examination** |
| 15th | Week for Preparation of Theory Final Examination |